

Title (en)

Acid and alkali resistant nickel-chromium-molybdenum-copper alloys

Title (de)

Säure und alkaliresistente Nickel-Chrom-Molybdän-Kupferlegierungen

Title (fr)

Alliages de nickel-chrome-molybdène-cuivre résistants aux acides et alcalins

Publication

**EP 2660342 B1 20150218 (EN)**

Application

**EP 13002282 A 20130429**

Priority

- US 201261640096 P 20120430
- US 201213719369 A 20121219

Abstract (en)

[origin: EP2660342A1] A nickel-chromium-molybdenum-copper alloy resistant to 70% sulfuric acid at 93°C and 50% sodium hydroxide at 121°C for acid and alkali neutralization in the field of waste management; the alloy contains, in weight percent, 27 to 33 chromium, 4.9 to 7.8 molybdenum, greater than 3.1 but no more than 6.0 copper, up to 3.0 iron, 0.3 to 1.0 manganese, 0.1 to 0.5 aluminum, 0.1 to 0.8 silicon, 0.01 to 0.11 carbon, up to 0.13 nitrogen, up to 0.05 magnesium, up to 0.05 rare earth elements, with a balance of nickel and impurities. Titanium or another MC carbide former can be added to enhance thermal stability of the alloy.

IPC 8 full level

**C22C 19/05** (2006.01); **C22F 1/10** (2006.01)

CPC (source: EP GB KR US)

**C22C 1/04** (2013.01 - KR); **C22C 19/05** (2013.01 - KR); **C22C 19/053** (2013.01 - EP GB US); **C22C 19/055** (2013.01 - EP US); **C22C 30/02** (2013.01 - GB); **C22F 1/10** (2013.01 - EP US)

Cited by

US10173290B2; US9802387B2; US10329647B2; US10954588B2; US11253957B2; US11939646B2; US10851444B2; US11279996B2; US11085102B2; US11111912B2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

**EP 2660342 A1 20131106; EP 2660342 B1 20150218**; AU 2013205303 A1 20131114; AU 2013205303 B2 20180510; BR 102013010555 A2 20150623; BR 102013010555 B1 20190424; CA 2808870 A1 20131030; CA 2808870 C 20200324; CN 103374671 A 20131030; CN 103374671 B 20161228; DK 2660342 T3 20150526; ES 2537191 T3 20150603; GB 201307692 D0 20130612; GB 2501825 A 20131106; GB 2501825 B 20150610; JP 2013231235 A 20131114; JP 6148061 B2 20170614; KR 102137845 B1 20200727; KR 20130122548 A 20131107; MX 2013004583 A 20131030; MX 344819 B 20170106; TW 201343927 A 20131101; TW I588268 B 20170621; US 2013287623 A1 20131031; US 2016289798 A1 20161006; US 9394591 B2 20160719; ZA 201303083 B 20140430

DOCDB simple family (application)

**EP 13002282 A 20130429**; AU 2013205303 A 20130418; BR 102013010555 A 20130429; CA 2808870 A 20130311; CN 201310153936 A 20130428; DK 13002282 T 20130429; ES 13002282 T 20130429; GB 201307692 A 20130429; JP 2013093205 A 20130426; KR 20130041580 A 20130416; MX 2013004583 A 20130424; TW 102105750 A 20130219; US 201213719369 A 20121219; US 201615177780 A 20160609; ZA 201303083 A 20130426